

## NOVEL OXIDIZING PRETREATMENT OF FLASH ONO NITRIDE FOR OXIDE DEPOSITION

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### ABSTRACT

10 A method of forming a dielectric structure for a flash memory cell includes forming a first layer of silicon dioxide, forming a layer of silicon nitride on the first layer of silicon dioxide, and pretreating the silicon nitride layer. Pretreatment of the silicon nitride layer includes oxidation. The method further includes depositing a second layer of silicon dioxide on the pretreated silicon nitride layer. Oxidation of the silicon nitride can occur in a batch process or in a single wafer tool, such as a single wafer rapid thermal anneal (RTA) tool. The oxidizing pretreatment of the nitride layer improves the integrity of the ONO structure and enables the second layer of silicon dioxide to be deposited rather than thermally grown. Because the nitride layer undergoes less change after deposition of the second layer of silicon dioxide, the present method improves the overall reliability of the ONO structure.

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